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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

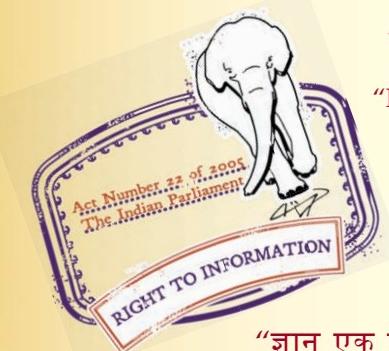
“Step Out From the Old to the New”

IS 7840 (1983): Technical drawings for glassware [PGD 24 : Drawings]

“ज्ञान से एक नये भारत का निर्माण”

Satyanaaran Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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AMENDMENT NO. 1 MARCH 1986

TO

IS:7840-1983/ISO 6414-1982 TECHNICAL
DRAWINGS FOR GLASSWARE

(First Revision)

(ISO Title: Technical Drawings for Glassware)

(Page 1, National Foreword, para 2, line 2) -
Substitute 'conventions' for 'conversions'.

(EDC 20)

Reprography Unit, ISI, New Delhi, India

*Indian Standard***TECHNICAL DRAWINGS FOR GLASSWARE***(First Revision)***(ISO Title : Technical Drawings for Glassware)****National Foreword**

This Indian Standard (first revision), which is identical with ISO 6414-1982 'Technical drawings for glassware', issued by the International Organization for Standardization (ISO), was adopted by the Indian Standards Institution on recommendation of the Drawings Sectional Committee and approved by the Engineering Division Council.

The original version of this standard IS : 7840-1973 'Drawing conversions for laboratory glass apparatus' was based on BS : 2774-1956 'Drawing conversions for laboratory glass apparatus', issued by the British Standards Institution. The revision of the standard has been made by the adoption of ISO 6414-1982 to bring it in line with ISO standard.

Whenever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.

Cross Reference*International Standard*

ISO 128-1982

ISO/R-129-1959

ISO 383-1976

ISO 1302-1978

Corresponding Indian Standard

IS : 10714-1983 General principles of presentation on technical drawings (Identical)

IS : 696-1972 Code of practice for engineering drawings (second revision) (Technically equivalent)

IS : 5165-1969 Interchangeable conical ground glass joints

IS : 10719-1983 Method of indicating surface texture on technical drawings (Identical)

There is no Indian Standard corresponding to ISO 4793-1980 to which reference is made in 2.

The following are the Indian Standards corresponding to the other International Standards referred to in the Annex.

Cross Reference*International Standard*

ISO 406-1982

ISO 1101/1

ISO 1661-1971

ISO 3098/1-1974

ISO 5455-1979

ISO 5457-1980

Corresponding Indian Standard

IS : 696-1972 Code of practice for general engineering drawings (second revision) (Technically equivalent)

IS : 8000 (Part I)-1976 Tolerances of form and of position for engineering drawings : Part 1 Generalities, symbols, indications on drawings (Technically equivalent)

IS : 8000 (Part 4)-1976 Tolerances of form and of position for engineering drawings : Part 4 Practical examples of indications on drawings (Technically equivalent)

IS : 9609-1983 English lettering for technical drawings (first revision) (Identical)

IS : 10713-1983 Scales for use in technical drawings (Identical)

IS : 10711-1983 Sizes of drawing sheets (Identical)

There is no Indian Standard corresponding to ISO 3898-1976 and ISO 5456 to which references are made in Annex.

0 Introduction

In this International Standard the figures merely illustrate the text and should not be considered as design examples. For this reason the figures are simplified and are not to scale.

For uniformity all figures in this International Standard are in first angle projection. It should be understood that alternative projection methods could have been used without prejudice to the principles established.

1 Scope and field of application

This International Standard establishes rules and conventions for particular use with drawings for technical glassware, for example laboratory glassware or glassware used in other technical fields.

Optical parts are not however, included herein.

2 References

ISO 128, *Technical drawings — General principles of presentation.*

ISO 129, *Technical drawings — Dimensioning.¹⁾*

ISO 383, *Laboratory glassware — Interchangeable conical ground joints.*

ISO 641, *Laboratory glassware — Interchangeable spherical ground joints.*

ISO 1302, *Technical drawings — Method of indicating surface texture on drawings.*

ISO 4793, *Laboratory sintered (fritted) filters — Porosity grading, classification and designation.*

For additional information, see the annex.

3 General

3.1 As a general principle, all glassware shall be drawn as if it were non-transparent (opaque), see ISO 128.

3.2 In order to meet particular requirements for the design and manufacture of glassware, additional rules and conventions are specified in the following clauses.

4 Sections

4.1 Small sections may be blackened, provided that the distance between their outlines on the actual drawing is not larger than 3 mm. If larger, the section shall be hatched. For thin-walled parts, see 6.1.

4.2 Parts of different materials such as glass-metal seals which are fused together and shown in section, shall be hatched differently (see figure 1).

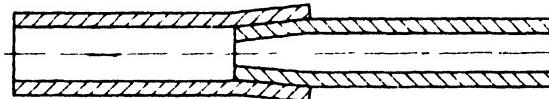


Figure 1

5 Treated parts

5.1 Treated surfaces (for example ground, silver-plated, etched) shall be indicated in accordance with ISO 128, ISO 129 and ISO 1302 (see figure 2).

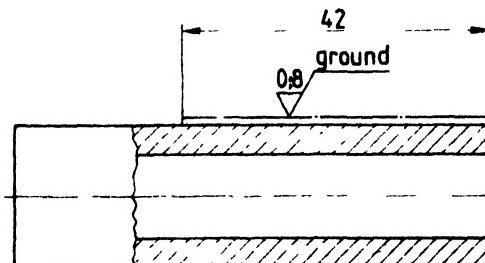


Figure 2

¹⁾ At present at the stage of draft. (Revision of ISO/R 129-1959.)

5.2 Interchangeable conical or spherical ground joints complying with the requirements of ISO 383 and ISO 641 respectively, shall be designated in the manner described therein. Accordingly, no detailed dimensioning of that portion and no indication of the surface finish are required.

An example of a code identification for interchangeable conical ground joints is shown in figure 3.

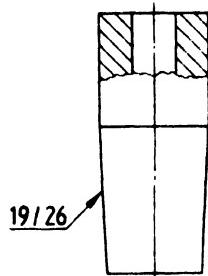


Figure 3

6 Thin walls

6.1 When drawn in section, thin walls shall be represented, in spite of their real wall thickness, by lines with a thickness of at least twice that used for visible outlines (see figures 4 and 5, and 4.1).



Figure 4

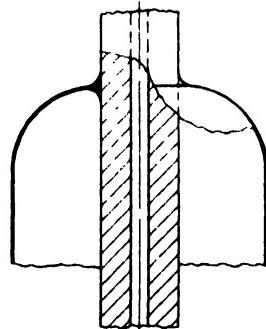


Figure 5

6.2 Unless otherwise specified (see 6.3), the dimension shown for the diameter of thin walls shall be the external diameter (see figures 6 and 7). The method to be applied depends on the particular requirement of the drawing.

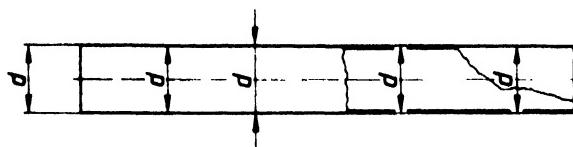


Figure 6

If it is necessary to specify the wall thickness, this shall be done as shown in figure 7.

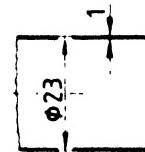


Figure 7

6.3 Internal diameters shall always be designated with the letters "int." (see figure 8).

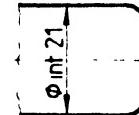


Figure 8

7 Tubes

7.1 Ends of tubes with special features (for example holes or closed ends) shall be drawn in section (see figure 8).

7.2 Coiled tubes represented in section or in view, may be drawn in a simplified manner (see figures 9 and 10). Their dimensioning should be determined by the functional requirements or the method of manufacture.

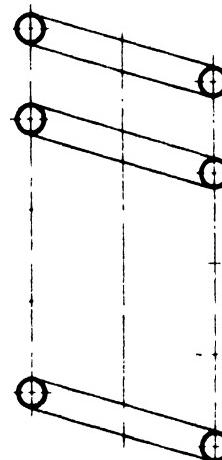


Figure 9

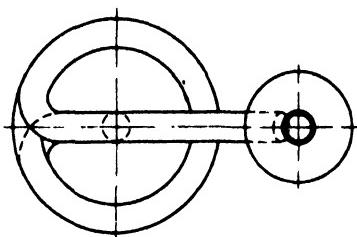
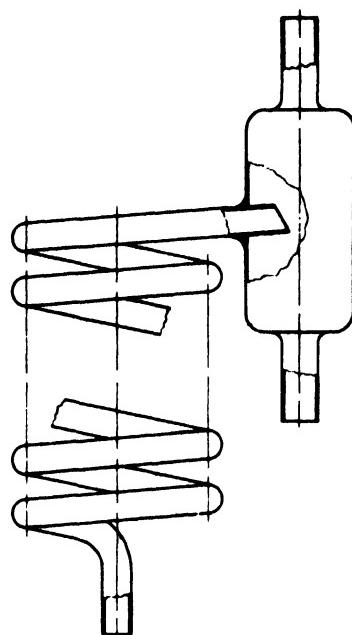


Figure 10

8 Sintered filters

When drawn in section sintered filters are indicated in a simplified manner by means of random dotting¹⁾ (see figure 11). Any other details shall be indicated separately in accordance with ISO 4793.

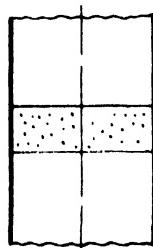


Figure 11

9 Joints

9.1 Where fused joints are to be shown in section, indicate the joint as shown in figure 12.

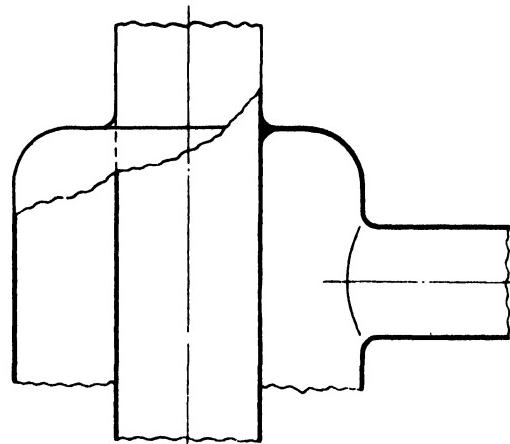


Figure 12

9.2 Where joints are cemented, the specification of the adhesive should be indicated as shown in figure 13.

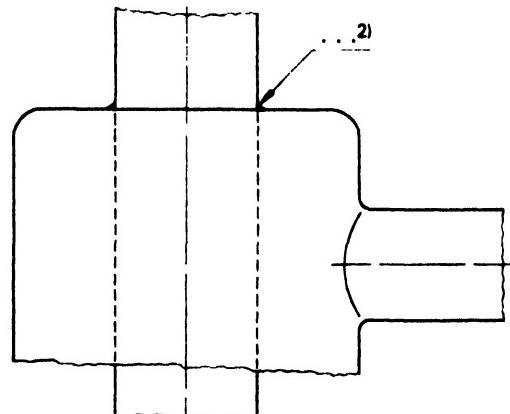


Figure 13

1) In order to permit copying of any drawing, the dotting shall be very clear.

2) Specification of the adhesive.

9.3 Removable parts such as stop-cocks, stirrers, and gland assemblies shall be drawn clearly spaced from each other as shown in figures 14, 15 and 16. This will avoid ambiguity as to whether the parts are or are not fused together.

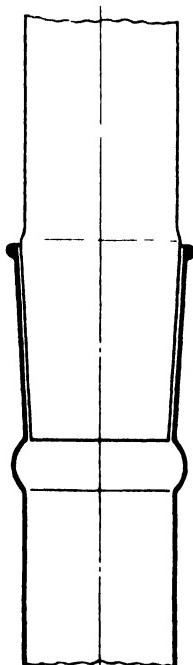


Figure 14

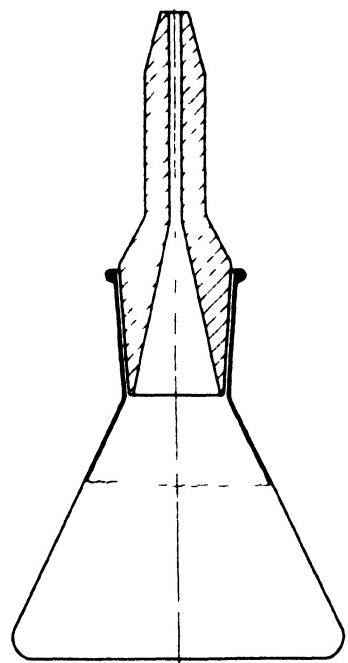


Figure 15

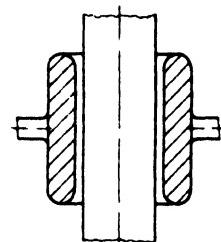


Figure 16

10 Composite glassware

When it is necessary to represent in detail one or more component parts of composite glassware which consists of sealed

parts, the drawing of the complete composite glassware may be simplified by separating the details with their dimensions for drawing clarity, as shown in figure 17.

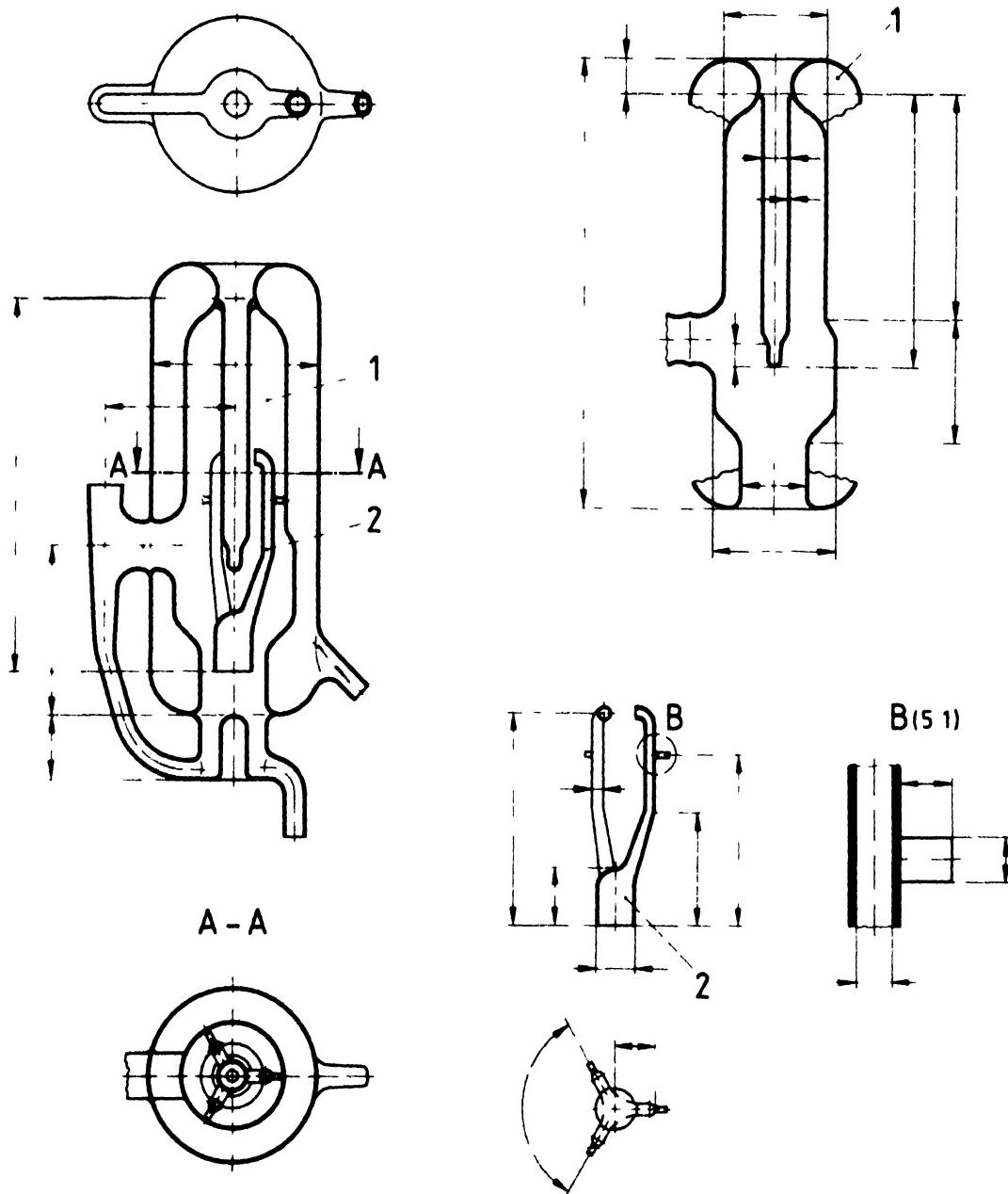


Figure 17

Annex

Other International Standards not mentioned in clause 2 applicable for drawing preparation

ISO 406, *Technical drawings — Linear and angular tolerancing — Indications on drawings.*¹⁾

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerances of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*²⁾

ISO 1661, *Technical drawings — Tolerances of form and of position — Part 4 : Practical examples of indications on drawings.*³⁾

ISO 3098/1, *Technical drawings — Lettering — Part 1 : Currently used characters.*

ISO 3898, *Bases for design of structures — Notations — General symbols.*

ISO 5455, *Technical drawings — Scales.*

ISO 5456, *Technical drawings — Pictorial representations.*⁴⁾

ISO 5457, *Technical drawings -- Sizes and layout of drawing sheets.*

1) At present at the stage of draft. (Revision of ISO/R 406-1964.)

2) At present at the stage of draft. (Revision of ISO/R 1101/1-1969.)

3) At present at the stage of draft. (Revision of ISO/R 1661-1971.)

4) At present at the stage of draft.